

## SEQUENCE LISTING

<110> KETCHUM, Karen et al.

<120> ISOLATED HUMAN TRANSPORTER PROTEINS,  
NUCLEIC ACID MOLECULES ENCODING HUMAN TRANSPORTER PROTEINS,  
AND USES THEREOF

<130> CL001013

<150> 09/815,301

<151> 2001-03-23

<150> 60/254,554

<151> 2000-12-12

<160> 5

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1468

<212> DNA

<213> Human

<400> 1

```

gcccttggca gcagccctgt taccgcttag atggcgcgca ggacagagcc ccccgacggg 60
ggctggggac ggggtggtggt gctctcagcg ttcttccagt cggcgcttgt gtttgggggtg 120
ctccgctcct ttggggtctt ctctgtggag tttgtggcgg cgtttgagga gcaggcagcg 180
cgcgtctcct ggatcgccct cataggaatc gcggtgcagc agtttgggag cccggtaggc 240
agtgccctga gcacgaagtt cgggcccagg cccgtggtga tgactggagg catcttggct 300
gcgctgggga tgctgctcgc ctcttttgcct acttccctga cccacctata cctgagtatt 360
gggttgctgt caggctctgg ctgggctttg accttcgctc cgacctggc ctgcctgtcc 420
tgttatttct ctgcgccagc atccctggcc accgggctgg cactgacagg cgtgggcctc 480
tctccttca catttgcccc ctttttccag tggctgctca gccactacgc ctggaggggg 540
tcctgtctgc tgggtgtctgc tctctccctc cactagtgg cctgtggtgc tctcctccgc 600
ccacctccc tggctgagga cctgctgtg ggtgggtcca gggcccaact cacctctctc 660
ctccatcatg gcccttctc ccgttacact gttgccctca ccctgatcaa cactggctac 720
ttcattccct acctccacct ggtggcccat ctccaggacc tggattggga cccactacct 780
gccgccttcc tactctcagt tggtgtctatt tctgacctcg tggggcgtgt ggtctccgga 840
tggtcgggag atgcagtccc agggcctgtg acacgactcc tgatgctctg gaccaccttg 900
actgggggtg cactagccct gttccctgta gctcaggctc ccacagccct ggtggctctg 960
gctgtggcct acggcttcac atcaggggct ctggcccccac tggccttctc tgtgctgcct 1020
gaactaatag ggactagaag gatttactgt ggctggggac tgttgagat gatagagagc 1080
atcggggggc tgetggggcc tcctctctca ggctacctcc gggatgtgtc aggcaactac 1140
acggcttctt ttgtgggtggc tggggccttc cttctttcag ggagtggcat tctcctcacc 1200
ctgccccact tcttctgctt ctcaactact acctccgggc ctccaggacct tgtaacagaa 1260
gcactagata ctaaagttcc cctaccacaag gaggggctgg aaggaggact gaactccaca 1320
gagtcaggcc cagaaagcca aagcttgaca gctccaggtc ttctcttgcc acgtcttggg 1380
ctccacagaa ccacagtgc ttaagattct tgatctgcct cccctagag caggcctggg 1440
gctcctgcaa tgtgtgtgcc aacctttt

```

<210> 2

<211> 457

<212> PRT

&lt;213&gt; Human

&lt;400&gt; 2

```

Met Ala Arg Arg Thr Glu Pro Pro Asp Gly Gly Trp Gly Arg Val Val
 1          5          10          15
Val Leu Ser Ala Phe Phe Gln Ser Ala Leu Val Phe Gly Val Leu Arg
 20          25          30
Ser Phe Gly Val Phe Phe Val Glu Phe Val Ala Ala Phe Glu Glu Gln
 35          40          45
Ala Ala Arg Val Ser Trp Ile Ala Ser Ile Gly Ile Ala Val Gln Gln
 50          55          60
Phe Gly Ser Pro Val Gly Ser Ala Leu Ser Thr Lys Phe Gly Pro Arg
 65          70          75          80
Pro Val Val Met Thr Gly Gly Ile Leu Ala Leu Gly Met Leu Leu
 85          90          95
Ala Ser Phe Ala Thr Ser Leu Thr His Leu Tyr Leu Ser Ile Gly Leu
100          105          110
Leu Ser Gly Ser Gly Trp Ala Leu Thr Phe Ala Pro Thr Leu Ala Cys
115          120          125
Leu Ser Cys Tyr Phe Ser Arg Arg Arg Ser Leu Ala Thr Gly Leu Ala
130          135          140
Leu Thr Gly Val Gly Leu Ser Ser Phe Thr Phe Ala Pro Phe Phe Gln
145          150          155          160
Trp Leu Leu Ser His Tyr Ala Trp Arg Gly Ser Leu Leu Leu Val Ser
165          170          175
Ala Leu Ser Leu His Leu Val Ala Cys Gly Ala Leu Leu Arg Pro Pro
180          185          190
Ser Leu Ala Glu Asp Pro Ala Val Gly Gly Pro Arg Ala Gln Leu Thr
195          200          205
Ser Leu Leu His His Gly Pro Phe Leu Arg Tyr Thr Val Ala Leu Thr
210          215          220
Leu Ile Asn Thr Gly Tyr Phe Ile Pro Tyr Leu His Leu Val Ala His
225          230          235          240
Leu Gln Asp Leu Asp Trp Asp Pro Leu Pro Ala Ala Phe Leu Leu Ser
245          250          255
Val Val Ala Ile Ser Asp Leu Val Gly Arg Val Val Ser Gly Trp Leu
260          265          270
Gly Asp Ala Val Pro Gly Pro Val Thr Arg Leu Leu Met Leu Trp Thr
275          280          285
Thr Leu Thr Gly Val Ser Leu Ala Leu Phe Pro Val Ala Gln Ala Pro
290          295          300
Thr Ala Leu Val Ala Leu Ala Val Ala Tyr Gly Phe Thr Ser Gly Ala
305          310          315          320
Leu Ala Pro Leu Ala Phe Ser Val Leu Pro Glu Leu Ile Gly Thr Arg
325          330          335
Arg Ile Tyr Cys Gly Leu Gly Leu Leu Gln Met Ile Glu Ser Ile Gly
340          345          350
Gly Leu Leu Gly Pro Pro Leu Ser Gly Tyr Leu Arg Asp Val Ser Gly
355          360          365
Asn Tyr Thr Ala Ser Phe Val Val Ala Gly Ala Phe Leu Leu Ser Gly
370          375          380
Ser Gly Ile Leu Leu Thr Leu Pro His Phe Phe Cys Phe Ser Thr Thr
385          390          395          400
Thr Ser Gly Pro Gln Asp Leu Val Thr Glu Ala Leu Asp Thr Lys Val
405          410          415
Pro Leu Pro Lys Glu Gly Leu Glu Gly Gly Leu Asn Ser Thr Glu Ser
420          425          430

```

Gly Pro Glu Ser Gln Ser Leu Thr Ala Pro Gly Leu Leu Leu Pro Arg  
 435 440 445  
 Leu Gly Leu His Arg Thr Thr Val Pro  
 450 455

<210> 3  
 <211> 6566  
 <212> DNA  
 <213> Human

<220>  
 <221> misc\_feature  
 <222> (1)...(6566)  
 <223> n = A,T,C or G

<400> 3

```

catttttagt gcatggattt tctaactgaa ccccttgggc aacgcttaat agtaggtact 60
attatcccca gtttacagat ggggaaacca actgagagat tcagcatctt gatcgagtta 120
agtaataaag tcaagattgg aactgggccca ggcacggtgg ctacgcctg taatcccagc 180
actttgggag gccaaggctg gtggatcact tgaggtcagg agttcgagac cagcgtggcc 240
aacatggtga gacctcgtct ctactaaaaa taccaaaatt aactgggcgt tgtggtggga 300
gcctgtaatc ccagaaactc aggagactga ggcaggagaa tcacttgaac ccgggaggtg 360
gaggttcgag tgagccaaga tcatgccact gcactccagc ctgggccaca gagcaagact 420
ccgtctcaaa ataaataaat aaataaataa ataaataaaa gactggaact gtgatctgat 480
tctaaagacc cgagttctta atcactatgt aatacagcca cagcaatttc tgtatctttg 540
gcatattccc caccagccga cattttgact cttagaaagt atatatgtgt attattgatg 600
attactttta tttcccacat ataaaattat ttaaggctca atatgtcttt taagactgca 660
cacctccctc cctgcctcca cttcttgttt gctgctttcc ccagtaatct gggagtgaac 720
attgagtcca cggtttcaag gtcagggtcc tgggaagtat ggcttataat gaaggaacag 780
gaaatccaag ccattggtgt tatggagact gggaaggact ggggagtgtt tgctaggggc 840
ctgaggacta cttgggtaag agggggctga ctgctccagt ggccagggtc atagttttgt 900
ctcttttagt taccaccaca tcagatcaaa aaaggtggtt aggaagtggg tgttactaga 960
gggcagagga aaaggttcca gcccagtgga ggaagaggta ggtggtgttg gtggggccct 1020
gtgtgagctt acagccgccc ttcctctcct cagttatttt tggctctctg gacctgtagg 1080
tttctgttta gtgggaacag aatgacagc aacgagttcc cactacagaa atgaacgcca 1140
ggagtccaac tcattccctc tctctcttcc cttagccgtt gaacttctca gggatccagg 1200
cttctaggtc tgcgtgccta gggctgctg ttagtggtct caggcgctgc gccaaacact 1260
tcgtttgagt ctcatctcct aacccctccc ctacccccaa cagggccttg caattcctgg 1320
acccctcatt aaagcaagag agtcctctcc tctccagacc cagtttacct accactaacc 1380
cttccgtgtg gctctgggtg ctgaaacggg gatgacttgg cccgctaggt gaagaggaga 1440
cggaagcttc ctggcagtc ccgcgtcacg tggggcccta cctagtcagc ctctaaccgc 1500
ccctccttac gcatgcgccc attcactgct ggtccccaac aatgcctaaa tcccgccctg 1560
cccttctcgt tccgcccctg cccgggagcc ccgcgtcctc attggcgagc tccagggttg 1620
cccggcccgg acaccccagt gataaaatag atcatctaca cggaaactgg cgcgctccag 1680
gggtggggcc caaactcagt tccaccctct ggctcccagc cgaacacoga accgggaccg 1740
atccggcccc ggcttgaact agctcagctc cgagctcgcg gaaccacgcc cccgggagac 1800
tctggcccgg ccagcgcggg ccaggtcttc agtcctatat cgccctgect tgggaaaagg 1860
tgcaggggccc tctcgccgcc tegtggggcc cttcctctct acctgectct ccaacccctc 1920
tcggccccga gccacccggc agcgggggtg ggtgtgcaga ggtgcggcgt ccagaaccgg 1980
gctcctgcag aggtctctgg tggcagcagc cctgttaccg cttagatggc gcgcaggaca 2040
cagccccccg acgggggctg gggatgggtg gtggtgctct cagcgttctt ccagtcggcg 2100
cttgtgtttg ggggtgctcg ctcccttggg gtcttcttcg tggagtgttg ggcggcgttt 2160
gaggagcagg cagcgcgcgt ctccctggatc gcctccatag gaatcgcggt gcagcagttt 2220
gggagtgagt gcggcgcctg gatctggcgg actgcgaccc tcggaaggga gagggaatgc 2280
ggcgactggg aagtggaagg gcgagggggc ggagatgctg ggggggagac ccctgagatc 2340
ttctcgcagc gccccttcca cttcctcagg cccggtaggc agtgccctga gcacgaagtt 2400

```

cgggcccagg cccgtggtga tgactggagg catcttggct gcgctgggga tgetgctcgc 2460  
 ctcttttgc tcttcttga cccacctata cctgagtatt gggttgctgt caggtgagag 2520  
 cctgcacaag ggcaggagag tcaaagtctt agatcggttg atgttcacct ccttctgct 2580  
 ccttccaaag ggttcgggga gaagctgagg gaaagtttag ctagcacctg taccagaag 2640  
 ggaattctta ataggaatga ctaaagcgac aaacatggtg aggaattagg aaattcaagg 2700  
 atgatgaaac ctggccaggc acggtggctc acgcctgtaa tcccagcact ttgggaagcc 2760  
 gaggcgggtg gatcacgagg tcaggagttt gagaccagcc tggccaacat ggtgaaacc 2820  
 cgtctctaca aaaatacaaa aattagccgg gcctgggtggc gctaatacca gttactcggg 2880  
 aggctgaggc aggagaatcg cttgaacccg ggaggcggag gttgcagtga gccaagatcg 2940  
 caccactgca ctccagcctg ggcgacagag caagattctg tctcaaaaaa aaaaaaaaaa 3000  
 aaaaaaaaaa agatgaaacc aagtatacaa gccagaagc ctagggtctaa tgggactgga 3060  
 gtgcaaaagg aagaattact ataaaatggt gctaggggcc aggcacggtg gctcacgcct 3120  
 gtaatccag cactttggga ggcgaggcg ggcggatcac gaggtcagga gatcaagacc 3180  
 atcctggcta acacggtgaa atcacgtctc tactaaaaac acaaaaaatt agctgggcgt 3240  
 ggtggcagg tactgtagtc ccagctactc gggaggctga ggcaggagaa tgggtgtaac 3300  
 ccgggaagca gagcttgag tgagccgaga ttgcaccact gcaactccagc ctgggcgaca 3360  
 gagcgagact ccgtctcaaa aaaaaaaga aaaaaaagg tgctaggtac tgtgactgtg 3420  
 aaatcgatat cattattgga ttacagctg gggaaaagct ttaaagctta tacaacttgg 3480  
 caaatgaagg tcacacagct agaaatggta agcccagggt ctaactccaa agttctgtgc 3540  
 tagttacctt acaaactttg tctctaattc tccacaatcc caaaaagtgt attattacat 3600  
 tttgcagttg agaaggttga ggctgggggt gttaagtaaa acacacaagg ttacacagct 3660  
 atgaagtatc caagccaaga ttgtatccca ggtctgtggg actccgaagc aagtgtctaca 3720  
 tttctgctgt gggcaatgcg gggattactg tgtgccttga gctccctaag agttctcaac 3780  
 accacttctt cctttttgac aggtctctggc tgggctttga ccttcgctcc gacctggcc 3840  
 tgccctgtct cctccttcac tcgcccagca tccctggcca ccgggctggc actgacaggc 3900  
 gtgggcctct cctccttcac atttgcccc tttttccagt ggctgctcag ccactacgcc 3960  
 tggagggggg cctgctgctt ggtgtctgct ctctccctcc acctagtggc ctgtggtgct 4020  
 ctccctccgc caccctccct ggctgaggac cctgctgtgg gtggtcccag ggcccaactc 4080  
 acctctctcc tccatcatgg ccccttcctc cgttacactg ttgccctcac cctgatcaac 4140  
 actggctact tcattcccta cctccacctg gtggcccatc tccaggacct ggattgggac 4200  
 ccaactacct ctgccttctt actctcagtt gttgctatct ctgacctcgt ggggcgtgtg 4260  
 gtctccggat ggctgggaga tgcagtccca gggcctgtga cactgactct gatgctctgg 4320  
 accaccttga ctgggggtgc actagccctg ttccctgtag ctgaggtctc cacagccctg 4380  
 gtggctctgg ctgtggccta cggttcaca tcaggggctc tggccccact ggccttctct 4440  
 gtgctgctg aactaatagg gactagaagg atttactgtg gctgggact gttgcagatg 4500  
 atagagagca tcgggggggt gctggggcct cctctctcag gtaagtggaa tggggttccc 4560  
 agggggtgag ggctgccatg ttgcacaact aggggagggg actattctca ttacagtgt 4620  
 tgtgaatatt gccctctggt gtagtacagt acacagcctg cgtggccaac catagcatcc 4680  
 ctgaaatggg tccatggggc aaagaacttg gggctgggaa agtctgagtg gaaagacaaa 4740  
 aagaagctaa gtggaacct tggcagggtg cctacggctt gggtttgcag aggacctggc 4800  
 agaacctggc cagacacaga cgtagcattc cagtgtgcac cctttccttt ggcctactgg 4860  
 gccccaaacc aggtatctga ggcacctggt caaagttctg ctggctcagg gtgccagaac 4920  
 tttcagacct ttatctctc ttaccatta actgaagctt tagaaaggcc acagttggtg 4980  
 ggcgcctgta gtcccagcta ctcaggaggc tgaggcagga gaatggcatg aaccggggag 5040  
 gcggagcttg cagtgagctg agatcgcgcc actgcacttc agcctgggag gccagaaaga aaggcacaag 5100  
 actccgtctc aaaaaaaaaa aaaaaaagaa ggccacagtt gccagaaaga aaggcacaag 5160  
 tatgcctgac tcaatctgga tctccaaatc cctgcaggct ggtttggagg tcttttctga 5220  
 aggcggggag gtggttga aa ttaacttttg aggcctttt gggaaaccag agttcttaag 5280  
 tttatccaac tattccatgg gagttccaac tctctgaga tgataagtct tccctccacc 5340  
 caaaaatgta tctgagccct cagccccagc aaatagatca ctcatgtgta ttcttttct 5400  
 ctcttgacc taggtacct ccgggatgtg acaggcaact acacggcttc ttttgggtg 5460  
 gctggggcct tcttctttc agggagtggc attctcctca cctgccccca cttcttctgc 5520  
 ttctcaacta ctacctccg gccccaggag cttgtaacag aagcactaga tactaaagtt 5580  
 ccctaccca aggaggact ggaaggagga ctgaactcca cagagtcagg cccagaaagc 5640  
 caaagcttga cagctccagg tcttctcttg ccacgtcttg gtctccacag aaccacagtg 5700  
 ccttaagatt cttgatctgc ctccccctag agcaggcctg gggctcctgc aatgtgtgtg 5760  
 ccaacccttt gtattttgtt gaggactctt atttctccgt tactctccta accttttctt 5820

```

ctttttttt tttcccgaga cggagctctt ctctgttgcc caggctggag tgcagtgatg 5880
tgatctcggc tcaactgcaac ctccgcttcc cgggttcaag cgattctcct gcctcagcct 5940
cccaagtagc tgggattaca ggccgggagcc accacacccg gctatTTTTT tttttttttt 6000
tttnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnttttgg tagagacagg gtttcacccat 6060
gttggccagg atggtctcga actcctgacc ttgtgatcca ccccccgccc ctccctcggc 6120
cttccaaagt gctgggatta caggcgtgag ccaccacacc cagcctcccc taaccttttc 6180
taaaggaccc aggagttttg aaggatccgg gagttcctgc ttcactgagc tgtgaatcaa 6240
ctgtgaaaat caaaggccaa gagacttatc atgctttata taacatctct agtgttgcct 6300
cctgagtttc ttctctgaag acacatgttt gggaaacaaa actgtccctt tgagataaaa 6360
tcaaataaga aaattggata ataatcaciaa cctcaaaatg agctggggcc catatgcttg 6420
ggttggccga atggagtcac gcctggaagt ggaggagagt gtccaggagc tccgatgacc 6480
caaggcattt taaccctgga atctgctctc caggctacca ccacatacct ccctcttccc 6540
cattatccct gtggcttaga aaagaa 6566

```

&lt;210&gt; 4

&lt;211&gt; 456

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 4

```

Arg Gly Ala Gly Pro Pro Asp Gly Gly Trp Gly Trp Val Val Leu Gly
1          5          10          15
Ala Cys Phe Val Ile Thr Gly Phe Ala Tyr Gly Phe Pro Lys Ala Val
20          25          30
Ser Val Phe Phe Arg Glu Leu Lys Arg Asp Phe Gly Ala Gly Tyr Ser
35          40          45
Asp Thr Ala Trp Val Ser Ser Ile Met Leu Ala Met Leu Tyr Gly Thr
50          55          60
Gly Pro Leu Ser Ser Ile Leu Val Thr Arg Phe Gly Cys Arg Pro Val
65          70          75          80
Met Leu Ala Gly Gly Leu Leu Ala Ser Ala Gly Met Ile Leu Ala Ser
85          90          95
Phe Ala Ser Arg Leu Leu Glu Leu Tyr Leu Thr Ala Gly Val Leu Thr
100          105          110
Gly Leu Gly Leu Ala Leu Asn Phe Gln Pro Ser Leu Ile Met Leu Gly
115          120          125
Leu Tyr Phe Glu Arg Arg Arg Pro Leu Ala Asn Gly Leu Ala Ala Ala
130          135          140
Gly Ser Pro Val Phe Leu Ser Thr Leu Ser Pro Leu Gly Gln Leu Leu
145          150          155          160
Gly Glu Arg Phe Gly Trp Arg Gly Gly Phe Leu Leu Phe Gly Gly Leu
165          170          175
Leu Leu His Cys Cys Ala Cys Gly Ala Val Met Arg Pro Pro Pro Gly
180          185          190
Pro Gln Pro Arg Pro Asp Pro Ala Pro Pro Gly Gly Arg Ala Arg His
195          200          205
Arg Gln Leu Leu Asp Leu Ala Val Cys Thr Asp Arg Thr Phe Met Val
210          215          220
Tyr Met Val Thr Lys Phe Leu Met Ala Leu Gly Leu Phe Val Pro Ala
225          230          235          240
Ile Leu Leu Val Asn Tyr Ala Lys Asp Ala Gly Val Pro Asp Ala Glu
245          250          255
Ala Ala Phe Leu Leu Ser Ile Val Gly Phe Val Asp Ile Val Ala Arg
260          265          270
Pro Ala Cys Gly Ala Leu Ala Gly Leu Gly Arg Leu Arg Pro His Val
275          280          285
Pro Tyr Leu Phe Ser Leu Ala Leu Leu Ala Asn Gly Leu Thr Asp Leu

```

```

      290              295              300
Ile Ser Ala Arg Ala Arg Ser Tyr Gly Thr Leu Val Ala Phe Cys Ile
305              310              315              320
Ala Phe Gly Leu Ser Tyr Gly Met Val Gly Ala Leu Gln Phe Glu Val
      325              330              335
Leu Met Ala Thr Val Gly Ala Pro Arg Phe Pro Ser Ala Leu Gly Leu
      340              345              350
Val Leu Leu Val Glu Ala Val Ala Val Leu Ile Gly Pro Pro Ser Ala
      355              360              365
Gly Arg Leu Val Asp Ala Leu Lys Asn Tyr Glu Ile Ile Phe Tyr Leu
      370              375              380
Ala Gly Ser Glu Val Ala Leu Ala Gly Val Phe Met Ala Val Thr Thr
385              390              395              400
Tyr Cys Cys Leu Arg Cys Ser Lys Asn Ile Ser Ser Gly Arg Ser Ala
      405              410              415
Glu Gly Gly Ala Ser Asp Pro Glu Asp Val Glu Ala Glu Arg Asp Ser
      420              425              430
Glu Pro Met Pro Ala Ser Thr Glu Glu Pro Gly Ser Leu Glu Ala Leu
      435              440              445
Glu Val Leu Ser Pro Arg Ala Gly
      450              455

```

&lt;210&gt; 5

&lt;211&gt; 456

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 5

```

Arg Gly Ala Gly Pro Pro Asp Gly Gly Trp Gly Trp Val Val Leu Gly
1      5      10      15
Ala Cys Phe Val Thr Gly Phe Ala Tyr Gly Phe Pro Lys Ala Val
      20      25      30
Ser Val Phe Phe Arg Glu Leu Lys Arg Asp Phe Gly Ala Gly Tyr Ser
      35      40      45
Asp Thr Ala Trp Val Ser Ser Ile Met Leu Ala Met Leu Tyr Gly Thr
      50      55      60
Gly Pro Leu Ser Ser Ile Leu Val Thr Arg Phe Gly Cys Arg Pro Val
      65      70      75      80
Met Leu Ala Gly Gly Leu Leu Ala Ser Ala Gly Met Ile Leu Ala Ser
      85      90      95
Phe Ala Ser Arg Leu Val Glu Leu Tyr Leu Thr Ala Gly Val Leu Thr
      100     105     110
Gly Leu Gly Leu Ala Leu Asn Phe Gln Pro Ser Leu Ile Met Leu Gly
      115     120     125
Leu Tyr Phe Glu Arg Arg Arg Pro Leu Ala Asn Gly Leu Ala Ala Ala
      130     135     140
Gly Ser Pro Val Phe Leu Ser Met Leu Ser Pro Leu Gly Gln Leu Leu
      145     150     155     160
Gly Glu Arg Phe Gly Trp Arg Gly Gly Phe Leu Leu Phe Gly Gly Leu
      165     170     175
Leu Leu His Cys Cys Ala Cys Gly Ala Val Met Arg Pro Pro Pro Gly
      180     185     190
Pro Pro Pro Arg Arg Asp Pro Ser Pro His Gly Gly Pro Ala Arg Arg
      195     200     205
Arg Arg Leu Leu Asp Val Ala Val Cys Thr Asp Arg Ala Phe Val Val
      210     215     220

```

Tyr	Val	Val	Thr	Lys	Phe	Leu	Met	Ala	Leu	Gly	Leu	Phe	Val	Pro	Ala	225	230	235	240
Ile	Leu	Leu	Val	Asn	Tyr	Ala	Lys	Asp	Ala	Gly	Val	Pro	Asp	Ala	Glu	245	250	255	
Ala	Ala	Phe	Leu	Leu	Ser	Ile	Val	Gly	Phe	Val	Asp	Ile	Val	Ala	Arg	260	265	270	
Pro	Ala	Cys	Gly	Ala	Leu	Ala	Gly	Leu	Gly	Arg	Leu	Arg	Pro	His	Val	275	280	285	
Pro	Tyr	Leu	Phe	Ser	Leu	Ala	Leu	Leu	Ala	Asn	Gly	Leu	Thr	Asp	Leu	290	295	300	
Ile	Ser	Ala	Arg	Ala	Arg	Ser	Tyr	Gly	Thr	Leu	Val	Ala	Phe	Cys	Ile	305	310	315	320
Ala	Phe	Gly	Leu	Ser	Tyr	Gly	Met	Val	Gly	Ala	Leu	Gln	Phe	Glu	Val	325	330	335	
Leu	Met	Ala	Thr	Val	Gly	Ala	Pro	Arg	Phe	Pro	Ser	Ala	Leu	Gly	Leu	340	345	350	
Val	Leu	Leu	Val	Glu	Ala	Val	Ala	Val	Leu	Ile	Gly	Pro	Pro	Ser	Ala	355	360	365	
Gly	Arg	Leu	Val	Asp	Ala	Leu	Lys	Asn	Tyr	Glu	Ile	Ile	Phe	Tyr	Leu	370	375	380	
Ala	Gly	Ser	Glu	Val	Ala	Leu	Ala	Gly	Val	Phe	Met	Ala	Val	Thr	Thr	385	390	395	400
Tyr	Cys	Cys	Leu	Arg	Cys	Ser	Lys	Asn	Ile	Ser	Ser	Gly	Arg	Ser	Ala	405	410	415	
Glu	Gly	Gly	Ala	Ser	Asp	Pro	Glu	Asp	Val	Glu	Ala	Glu	Arg	Asp	Ser	420	425	430	
Glu	Pro	Met	Pro	Ala	Ser	Thr	Glu	Glu	Pro	Gly	Ser	Leu	Glu	Ala	Leu	435	440	445	
Glu	Val	Leu	Ser	Pro	Arg	Ala	Gly									450	455		